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ABSTRACT

This review focuses on distance education research in Norway, although studies in Finland, Denmark, and Sweden are briefly mentioned. Examples are given of distance education projects from the 1970s to the present. Research in distance education has a more continuous tradition in Norway than in the other Scandinavian countries, and evaluation studies seem to be a significant part of research activities in Nordic countries. The field of distance education has traditionally had a weak position in Norwegian university-based research; much of the literature comes from evaluations of government projects, under the agreed governmental policy of support for distance education. Research efforts have included theoretical analyses, survey research, experimental research, explorations of new technology, and evaluation research. Many of the 102 references are materials written in Norwegian. (SLD)

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Selected Articles on Policy, Research and Evaluation in Distance Education

Torstein Rekkedal

Recent Research on Distance Education in Norway

Paper presented at the EADTU Conference on Quality, Standards and Research in European Distance Education, Umeå, Sweden, March 5-6, 1992.

Introduction

This article represents an adapted version of two papers presented at a Nordic seminar on distance education November 1991 and the EADTU conference on 'Quality, Standards and Research in European Distance Education' in Umeå, Sweden, March 1992, respectively.

According to information supplied from representatives from the different Nordic countries at the above mentioned Nordic seminar, research in distance education seems to have a more continuous tradition in Norway and is also reported in larger quantity than in the other Nordic countries. Thus, in this article we shall concentrate on Norwegian research in distance education. This article contains references to original project publications in Norwegian, as well as some reports, papers and articles available in English.

It seems that distance education in Denmark and Iceland has played a minor role in adult education. In Finland private distance education has been quite important, while university distance education just is in its beginning. According to the reports at the Nordic seminar, research in the field has in these countries been quite marginal. In Denmark group learning has generally been a highly valued pedagogical element in adult learning. This tradition seems to be transferred to Danish practice and research in distance education developing at the universities. In our view, this tradition has initiated some really interesting theoretical and empirical research work, in fact, one of the few attempts to plan and develop distance education based on a systematic analysis of group based learning theory and new technology. We are referring to PICNIC (Project in Computer Networks in Distance Education Curricula) at the Aalborg University Centre and other activities at the Jutland Open University (see e.g. the publication series 'PICNIC-nyt' and TNP (Teknologi og ny pædagogikk), Lorentsen 1989, Nipper 1989).

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Sweden used to be the country in this region where distance education really had a central position. 20 years ago Hermods was one of the largest distance education institutions in the world, and was very early in establishing a research and development unit. When distance education really started to expand at Swedish universities and colleges in the 70ies, research and evaluation also seemed to be at a peak, see e.g. the works including doctoral theses of Bååth (1979, 1980), Flinck (1978) and Willén (1981) and the report series from Umeå (Distansrapporter 1-17 (1973-76)), Lund (Pedagogical reports (1975-1980)) and Uppsala Universities. Some of these early works have been very influential and much cited internationally. Börje Holmberg's (e.g. 1989) contributions to distance education research are also well known, the majority being published after he became the director of the research institute ZIFF at the German FernUniversität, but still highly influenced by research and practice in the Nordic countries.

During the Nordic seminar last year, one might get the impression that distance education research in Sweden has a relatively less central position today, than a few years ago. This observation might or might not be correct.

Evaluation studies seem to be part of research activities in all Nordic countries. During the Nordic seminar all five countries gave examples of one or more recent evaluation studies of distance education, such as formal evaluation of programmes with large scale/mass education aims such as national multi media projects involving the public radio and television organizations (Lorentsen 1991, Rekkedal 1991).

Distance education research in Norway

Untill recently research on distance education has generally been conducted by institutions with basis in correspondence and adult education, specifically the larger distance learning institutions such as NKI and NKS. They both established their research and development units in the beginning of the 70ies.

In the following, we shall look into research within distance education in Norway. It is clearly difficult to cut a clear line between activities and projects which deserve to be classified as research and research based evaluations, and which are part of a continuous activity of development of teaching and learning methods. Our intention has been to include projects, which at least have been defined as 'research or evaluation projects'. This overview does probably not cover it all, the reason being that our information hardly is absolutely complete.

Some general remarks

The field of distance education has traditionally had a weak position in Norwegian university based research, although there are some examples of projects at the Institute of Educational Research at the University of Oslo, some very few conducted by the scientific and academic staff and several graduate student theses. Other university faculties and colleges have also contributed with some research studies in the field, mainly student theses.

It is all reason to believe that the Norwegian college and university environments will make increasing influence on research in distance education. This as a result of a general rise in the interest in communication media and distance education, and the extensive and quite systematic governmental effort to stimulate development of distance study programmes at the tertiary level. These political intentions have been channelled through a project supervised by the Executive Board for Distance Education (SOFF). The Ministry has emphasized that all distance education projects financially supported by the government should be formally evaluated. Thus, several evaluation studies will be carried out during the years to come. Hopefully, some of these projects will be based on systematic application of evaluation research methods.

National cooperation

The fact that Norway has had a continuous tradition of research in distance education is partly a result of an agreed governmental policy to support distance education. This governmental policy and financial support has secured the operation of stable and viable distance education institutions.

The Ministry has to some extent granted financial support to research on distance education. In addition, the Norwegian Telecom Research has been a driving force during the last 5-6 years, including financial support and project initiatives within its primary areas of interest - field experiments on media and technology connected with tele communication services. The foundation, Centre for Distance Education (SEFU) has been established by NKI, NKS and the Norwegian State Institution for Distance Education (NFU) to stimulate cooperation and coordination of research on distance education as one of its main goals.

Public efforts on educational research is in Norway channelled through a special 'Programme for Educational Research'. This programme has defined 'new educational and organizational forms' as one priority area. However, as distance education has not been included as a part of this area, the programme has not yet granted financial support to distance education research projects.

Norwegian distance educators, institutions and organizations have been quite active in international cooperation in distance education, and have also taken part in international research efforts, such as the 'Two way communication' project conducted by the research group in Lund in the 70ies (see e. g. Bååth 1980 and Flinck 1978) and initiatives taken by the ICDE Research committee in the 80ies. The international project initiated by ICDE on two way communication carried out by 5 different institutions in 4 countries, was based on an earlier Norwegian experiment (Barker et al. 1986).

NKI and NKS have cooperated on research and development for nearly 20 years. Some of these cooperative projects have been part of initiatives taken by the Norwegian Association for Distance Education (NADE) and/or the Ministry/Correspondence School Council.

Some examples:
1972-1973: A research project analysing the tutor's activities and functions in correspondence education and experiments on the use of preproduced comments and solutions was carried out in cooperation between NKI, NKS, the Correspondence School Council and the Educational Research Council (Rekkedal & Ljosså 1974).

1979-1983: The project 'Early drop out in distance education' was a cooperative initiative of NADE and the Correspondence School Council. The project tried to analyse causes of drop out and point out possibilities of increasing study quality with specific emphasis on the first phases of study (Huitfeldt 1983, Rekkedal 1985).

1984-1987: The 'Technology project' was a cooperative project between members of NADE supported by the Ministry. The aims included upgrading the member institutions on applications of media and communication technologies and carrying out defined research projects. The different projects covered technologies such as broadcasting and local radio, telephone, audio cassettes and satellite distribution, including experiments on a specific cable network (The Jevnaker Project) in cooperation with the Telecom Research (Blom et al. 1988, Blom & Kristiansen 1988, Rekkedal 1989).

1989-1991: NKI and NKS have cooperated on developing theory and practice on computer based communication and experiments with computer conferencing systems. NKI has developed a conferencing system (EKKO) specifically designed for distance education, while NKS has experimented with the PortaCOM system installed at the University of Oslo. The work has also included international

cooperation and exchange of information (Fjuk & Jenssen 1990, Fjuk et al. 1990, Paulsen 1989a, 1989b, 1989c, 1990, 1992, Paulsen & Rekkedal 1988, 1989, 1990a, 1990b, Søby 1990, 1991, 1992).

Research in different areas

Theoretical analyses

As research in distance education in Norway has been closely integrated with practice, the research has been more concentrated on empirical studies than on pure theoretical analyses. Nilsen's (1969/1974) analysis of theory, practice and history mainly related to university correspondence education is one example of early theory studies. He has also looked into the history of distance education (Nilsen 1983) reviewed in Distance Education 5, 2, 1984)).

Although, it perhaps should be defined out of the research field, we would like to mention two projects for competency development carried out in the 70ies - with results being published through reports on 'Brevkursutvikling i lys av systemtenkning' ('System approach to correspondence education') and 'Guide for correspondence tutors' (Brevskolerådet/NADE 1974/1987) as two such examples. Another project ,'Fjernundervisning - Læring uten grenser' ('Distance education - Learning without limits'), carried out by NFU, a collection of theoretical and experience based articles related to international distance education also belongs to this category.

In connection with the forementioned project 'Early drop out' Huitfeldt (1983) carried out an extensive literature study on drop out in distance study.

Survey research

Several of the early studies were surveys on different student groups, often emphasizing recruitment and drop out. Three graduate theses at the University of Oslo studied needs and attitudes (Bø 1962), recruitment (Isaksen 1973) and completions (Huitfeldt 1979) respectively among distance students in the armed forces. Another thesis reported recruitment, achievements and drop out at one private institution, NKI (Rekkedal 1972a). A few years later Ness (1976) carried out a similar survey on a comparable commercial school programme offered by 5 different distance education institutions. The NKI study was later taken as basis for methodological experiments and new surveys, such as the 'three years intake study' (Rekkedal 1973a) and a longitudinal/comparative study on recruitment and drop out in distance and full time education (Rekkedal 1976, 1978, 1982).

Experimental research
Distance education is to some degree suited as a 'laboratory' setting for experiments, as one may get the opportunity to offer programmes under quite controlled circumstances based on randomly selected groups of students. Many research projects, specifically at NKI, has tried out different pedagogical approaches and administrative routines based on experimental research methods, such as 'following up' systems (Rekkedal 1972b, Rekkedal 1973b, Rekkedal & Hallem 1975), 'turn around time' (Rekkedal 1973c, 1983), 'tutoring' and 'guidance' (Rekkedal & Ljosså 1974, Rekkedal 1985, Rekkedal 1989).

Distance education and new technology
Media and technology, specifically computers and tele communications have received much attention the last few years. This focus has been caused by the general interest of the private distance education institutions, the Telecom Research defining distance education as a priority area and governmental initiatives such as establishing 'The State Institution for Distance Education (NFU) (Rande 1982) and stimulating the development of distance education at universities and colleges. All parties seem to claim pedagogy to be more important than technology. On the other hand, with some exceptions, the funding agencies and many research projects seem to focus more on new tecnology and media as such, than on learning and teaching theory and methodology, when trying to solve educational challenges in new ways.

Concerning technology, we have mentioned NADE's 'technology project' primarily analysing and trying out simple, available and well known technologies. The project analysed and tried out telephone tutoring and conferencing (Blom et. al 1988, Blom 1990, Rekkedal 1989, 1991) and the use of audio cassettes in two way communication (Krane 1989). (A student thesis has also recently been submitted to the University of Oslo with a theoretical analysis and literature study on the use of audio cassettes in distance education (Berg 1991). As mentioned before, the 'technology project' also analysed and/or experimented with broadcasting, cable TV and satellite distribution (Blom & Kristiansen 1987, 1988, Blom et al. 1988, Blom 1991, Kristiansen 1988).

Computer mediated communication and two way audio and video conferencing have gained a lot of interest. The EKKO project at NKI startet in 1986 with the development of the conferencing system, EKKO, specifically for distance education. The experiments and developments within this project have been reported in articles, papers and monographs (Paulsen 1989a, 1989b, 1989c, 1990, 1992, Paulsen & Rekkedal 1988, 1989, 1990a, 1990b). Bjørgen (1992a, 1992b) has carried out an analysis on social and family effects of participation in

computer based distance education. NKS has experimented with PortaCOM (Fjuk & Jenssen 1990, Fjuk et al. 1990, Søby 1990, 1991, 1992). Both institutions now operate computer conferencing (Electronic Colleges) as part of their ordinary programmes.

The Norwegian Telecom has put large resources into building up video conferencing facilities to serve business, industry and public needs. This technology has been based on 2Mbit communication network. For some years distance education users have been admitted to these facilities with 'free' or largely subsidized communication. These experiments have been followed up and reported - generally with support from or on behalf of the Telecom Research. Specifically, many field experiments in the North have been studied and evaluated as part of this scheme of funding (see e.g. Kristiansen 1989, Meistad 1990, Karlsen 1990, Indbjør 1990). Presently, the Telecom has taken further initiatives in evaluation of technical, educational and cost aspects of distance education based on videoconferencing (see e.g. Krane 1992, Holden 1992).

Side by side with these projects the Telecom Research has intiated and funded experiments on the use of the video telephone, a much cheaper technology which applies 64kBit communication, thus using 1 line in the ISDNetwork. The 'Trysil Project' tried out and evaluated distance education programmes in pedagogy, business economy and wood technology subjects (see Bårdseng 1991). Another experiment, the socalled TOVE project, examined distance counselling and communication using the video telephone and data transmission between two colleges in Nord-Trøndelag (Hallem 1989(?), Nordseth 1990). The Telecom Research has also published some general reports on distance education technology (Kristiansen 1990, 1991, 1992, Rasmussen 1990, Heljesen & Rasmussen 1991).

In addition to these experiments a couple of pilot projects on the use of telewriter technology have been carried out in Norway. One of these studied possibilities of teaching aphasia patients at a distance (Alstad & Backmann 1991). Another project tried out the telewriter technology in mathematics teaching, both as a medium for communication between the tutor and individual students, and as a medium for organizing cooperation between a group of students (Rekkedal & Vigander 1990). SEFU, NKI and NKS have just finished a series of experiments with telefax in distance education in cooperation with the Telecom Research (Krane & Veivåg 1991, Rekkedal 1992).

While the Telecom supported projects have analysed text, audio, video and graphics communication, research on ordinary television and radio in distance education is to some degree lacking. One graduate thesis looked into teaching via

television (Johnsen 1987, 1989). Further NKI and NKS has experimented with distribution via local TV and satellite. These experiences have been reported by Blom (1991).

Evaluation research
The majority of the projects mentioned above could perhaps be described as evaluation research. All the projects supported by the Telecom Research have field evaluation of specific media or technologies as a major element. Still, we have chosen to classify evaluation as one specific research area, consisting of projects which apply theory and scientific methods for quality assessment of distance education programmmes. Different institutions have carried out a large number of routine surveys to evaluate courses and programmes as part of their continuous development work. Results from such activities are normally internally reported only. We have chosen not to include such projects and activities in this overview.

SOFF (1991) has taken the initiative to develop evaluation guidelines for all distance education projects financially supported by the Ministry. SEFU is also carrying out a project trying to systematize experiences, theory and methods of evaluation of distance education. NFU has also commissioned several evaluation studies of their multi media projects (see e. g. Ingvaldsen & Madsen 1989, Grønvold 1989, Rognaldsen 1990, Gooderham & Lund 1991).

Some of the other large scale multi media projects, specifically those where the Norwegian Broadcasting has been involved, have been followed up by research based evaluation (see e. g. Elden 1976, Kvam 1975, Blom et al. 1992).

Concluding remarks

Making an overview of Norwegian research on distance education would deserve a more in debth analysis than we have been able to do here. The selection of projects does not give a fair picture of the quality (or quantity) of the work carried out. As the reference list only includes works available in English, many important projects published in Norwegian have been excluded.

This overview might constitute a basis for further systematizing of Norwegian distance education research, which probably will expand both in quantity and in types of problems to be examined, as new groups of researchers and institutions enter the area.

Future research needs

The question of future research needs was discussed at a Norwegian conference on 'Research programme for distance education' (SEFU 1989) and also at the Nordic seminar last year, where Bååth (1991) suggested some important areas for future research. Some of the areas in need for research mentioned on these occasions were:

1. Theory studies with relevance for distance education.
2. National policies and effects on distance education developments - and market research.
3. Different organizational forms and forms of cooperation.
4. Counselling and guidance.
5. Studies of the educational process, learning media and two way communication.
6. Teacher roles - interests and attitudes.
7. Efficiency and effects studies.
8. Different media - uses and applications.
9. The students' actual use of different media and interaction possibilities.
10. Intensive studies on methods of learning including direct observations.

It should be stressed that future research in distance education in Norway should build upon previous research and development work reported in Norway and internationally. There is a danger of waste of time and money when new groups enter the field and start experimenting without taking the effort to examine the experiences that already have been collected in distance education in Norway and elsewhere. It is also of interest to 'replicate' studies done in other contexts to see whether experiences gained under different circumstances are valid when developing new distance and flexible learning systems in Norway.

(This paper has also been adapted for presentation in Open Learning, 8, 1, 1993.)

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